

horizontal position, which assists the user to view and read the display.

It should be apparent that as the display is moved forward in the channels 31 into the region designated as B in the drawings, the depth of the grooves 43 becomes sufficiently great that the support tabs 42 no longer contact the inclined bottom surface. As such the display cover 12 is pivoted in the channel a full 180 degrees relative to the base from the fully closed position shown in FIG. 1 and 5 to the slate-style position shown in FIGS. 4 and 8. The user may thus utilize the device 10 in the slate-style or pen-based mode. It should be recognized that the ribbon cable 35 flexes and folds throughout the full range of angular positions. It should further be noted that rollers 40 in conjunction with the channels 31 allow smooth pivotal and sliding movement within the full range of positions without binding.

With reference to FIGS. 1-9 and particularly FIG. 9 it will be noted that the device 10 may be provided with an appropriate latch means 46 for maintaining the display case in secure engagement with the base 11 when in the fully closed position and the slate style position. It is contemplated that the latch means 46 may comprise a pair of opposed magnetic plates 47 mounted in the display cover 12 and the base 11 in corresponding positions so as to complement one another when closed or in the slate style mode. However, it is recognized that the latch 46 may be comprised of any number of appropriate engagement means for engaging two elements without departing from the spirit of the invention. It is further contemplated that the device 10 may include a pair of stop notches 48 in the grooves 43 at the transition point between regions A and B. Accordingly, the display may be quickly positioned by the user in the low profile laptop position depicted in FIG. 7. However, the notches 48 are not necessary to the operation of the device but may be included merely to facilitate quick positioning of the display.

Referring now to FIGS. 12-20 an alternative embodiment of the device 10 is depicted. The alternative embodiment differs from the first embodiment only in the hinge mechanism. As is apparent from the drawings, the rails 30 and channels 31 of the first embodiment are omitted in favor of channels 50A, 50B which are included in the end walls 24 of the base 11. The hinge pins of the first embodiment are similarly omitted in favor of a pair of hinge arms 51. Each arm 51 comprises an oblong main body portion 52 having pivot pins 54A and 54B extending orthogonally from each of its ends. A first pivot pin 54A engages the anti-friction bearing 39 fitted within the display cover 12 while a second pivot pin 54B engages the roller 40 which is fitted within the channel 50. The channels 50 and hinge arms 51 function together to provide the means for selectively positioning the display relative to the base, indicated generally by the numeral 55. Those skilled in the art should now recognize that positioning of the display cover 12 relative to the base 11 is accomplished as described above, in connection with the description of the first embodiment.

Thus a portable computing device is provided which permits operation in both the laptop and slate style modes, permitting a high degree of adjustability and compactness without giving up the other features desired in laptop and slate style computing devices. Accordingly, it is submitted that the device described herein accomplishes the objects of the invention and otherwise improves the art. While two preferred embodiments have been described in detail, such embodiments are to be considered as illustrative rather than limiting.

Based upon the foregoing disclosure, it should now be apparent that the use of the means for selectively positioning

the display portion of a laptop computing device with respect to the mating base, as described herein, will carry out the objects set forth hereinabove. It is, therefore, to be understood that any variations evident fall within the scope of the claimed invention and thus, the selection of specific component elements can be determined without departing from the spirit of the invention herein disclosed and described. In particular, practice according to the present invention is not necessarily limited to laptop computers per se, but can be applied to a variety of related computer-like devices having a movable cover. Moreover, as noted hereinabove, other hinge means may be substituted for the hinge mechanisms disclosed herein. Thus, the scope of the invention shall include all modifications and variations that may fall within the scope of the attached claims.

What is claimed is:

1. An improved portable computing device comprising:
 - a base portion;
 - a display portion containing a display screen and a touch input panel;
 - at least one channel disposed within said base portion;
 - at least one roller disposed within said channel; and
 - hinge pin means engaging said roller and said display portion whereby said display portion is slidably pivoted relative to said base portion;
 - at least one inclined groove disposed within said base portion;
 - at least one support tab extending from said display portion into said inclined groove to support said display portion at varying angles relative to said base position;
 - said channel and said inclined groove are carried within an end wall of said base, said channel being above said groove;
 - a second channel disposed within said base portion, opposite said first channel;
 - a roller disposed within said second channel;
 - hinge pins means engaging said roller within said second channel and said display portion whereby said display portion is slidably pivoted relative to said base portion;
 - a second inclined groove disposed within said base portion, opposite said first groove; and
 - a second support tab extending from said display portion into said second inclined groove to support said display portion at varying angles relative to said base position.
2. An improved portable computing device as set forth in claim 1, wherein said second channel and said second inclined groove are carried within an end wall of said base, said channel being above said groove.
3. An improved portable computing device comprising:
 - a base portion;
 - a display portion containing a display screen and a touch input panel;
 - at least one channel disposed within said base portion;
 - hinge arm means providing first and second hinge pins, said first hinge pin being engageable with said channel and said second hinge pin being engaging with said display portion whereby said display portion is slidably pivoted relative to said base portion;
 - at least one inclined groove disposed within said base portion; and
 - at least one support tab extending from said display portion into said inclined groove to support said display portion at varying angles relative to said base position.
4. An improved portable computing device as set forth in claim 3, wherein said channel and said inclined groove are